

Hideo HOSONO, Prof.

Department of the Materials Science and Engineering

1. List of Publications

- 1) *Temperature-dependent pseudogap in the oxyphnictides $\text{LaFeAsO}_{1-x}\text{F}_x$ and $\text{LaFePO}_{1-x}\text{F}_x$ seen via angle-integrated photoemission,*, Y. Ishida, T. Shimojima, K. Ishizaka, T. Kiss, M. Okawa, T. Togashi, S. Watanabe, X.-Y. Wang, C.-T. Chen, Y. Kamihara, M. Hirano, H. Hosono, and S. Shin, *Physical Review B* 79 (2009) 060503
- 2) *Humidity-Sensitive Electrical Conductivity in $\text{Ca}_{12}\text{Al}_{14-x}\text{Si}_x\text{O}_{32}\text{Cl}_{2+x}$ ($0 < x < 3.4$) Ceramics,* Katsuro Hayashi, Hiroki Muramatsu, Satoru Matsuishi, Toshio Kamiya, and Hideo Hosono, *Electrochemical and Solid-State Letters* 12 (2009) J11-J13
- 3) *Pressure Study of Superconducting Oxyphnictide LaFePO ,* K. Igawa, H. Okada, K. Arii, H. Takahashi, Y. Kamihara, M. Hirano, and H. Hosono, *J. of Phys. Soc. of Japan* 78 (2009) 023701
- 4) *As-75-NMR Studies on $\text{LaFeAsO}_{1-x}\text{F}_x$ ($x=0.14$) under a Pressure of 3 GPa,* K. Tatsumi, N. Fujiwara, H. Okada, H. Takahashi, Y. Kamihara, M. Hirano, and H. Hosono, *J. of Phys. Soc. of Japan* 78 (2009) 023709
- 5) *Mossbauer Spectroscopy of $\text{La}_{0.87}\text{Ca}_{0.13}\text{FePO}$ and $\text{LaFeAsO}_{0.93}\text{F}_{0.07}$ under External Magnetic Field and Nuclear Resonant Inelastic Scattering of $\text{La}_{0.87}\text{Ca}_{0.13}\text{FePO}$,* S. Higashitaniguchi, M. Seto, S. Kitao, Y. Kobayashi, M. Saito, M. Kurokuzu, T. Mitsui, Y. Yoda, Y. Kamihara, M. Hirano, and H. Hosono, *J. of Phys. Soc. of Japan* 78 (2009) 024704
- 6) *Pressure-Induced Superconductivity in Iron Phnictide Compound SrFe_2As_2 ,* K. Igawa, H. Okada, H. Takahashi, S. Matsuishi, Y. Kamihara, M. Hirano, H. Hosono, K. Matsubayashi, and Y. Uwatoko, *J. of Phys. Soc. of Japan* 78 (2009) 025001
- 7) *Effect of 3d transition metal doping on the superconductivity in quaternary fluoroarsenide CaFeAsF ,* S. Matsuishi, Y. Inoue, T. Nomura, Y. Kamihara, M. Hirano, and H. Hosono, *New J. of Physics* 11 (2009) 025012
- 8) *Magnetic order in the $\text{CaFe}_{1-x}\text{Co}_x\text{AsF}$ ($x=0.00, 0.06, 0.12$) superconducting compounds,* Y. Xiao, Y. Su, R. Mittal, T. Chatterji, T. Hansen, C. M. N. Kumar, S. Matsuishi, H. Hosono, and Th. Brueckel, *Physical Review B* 79 (2009) 060504
- 9) *Amorphous In-Ga-Zn-O coplanar homojunction thin-film transistor,* Ayumu Sato, Katsumi Abe, Ryo Hayashi, Hideya Kumomi, Kenji Nomura, Toshio Kamiya, Masahiro Hirano, and Hideo Hosono, *Appl. Phys. Lett.* 94 (2009) 133502-1 - 3

- 10) *Electrogagnetic properties of undoped LaFePnO(Pn=P,As)*, Y.Kamihara, T.Watanabe, T.Nomura, S.W.Kim, T.Kamiya, M.Hirano, and H.Hosono, J.Phys.: Conference series 150 (2009) 052090
- 11) *Epitaxial film growth and optoelectrical properties of layered semiconductors, LaMnXO (X = P, As, and Sb)*, Kentaro Kayanuma, Hidenori Hiramatsu, Toshio Kamiya, Masahiro Hirano, and Hideo Hosono, J. Appl. Phys. 105 (2009) 073903
- 12) *Antiferromagnetic bipolar semiconductor LaMnPO with ZrCuSiAs-type structure*, Hiroshi Yanagi, Takumi Watanabe, Katsuaki Kodama, Satoshi Iikubo, Shin-ichi Shamoto, Toshio Kamiya, Masahiro Hirano, and Hideo Hosono, J. Appl. Phys. 105 (2009) 093936-1 - 8
- 13) *Takatoshi Nomura, Yasunori Inoue, Satoru Matsuishi, Comparison of crystal structures and the effects of Co substitution in a new member of the Fe-1111 superconductor family AeFeAsF (Ae = Ca and Sr): a possible candidate for a higher-Tc superconductor*, Masahiro Hirano, Jung Eun Kim, Kenichi Kato, Masaki Takata and Hideo Hosono, Supercond. Sci. Technol. 22 (2009) 055016
- 14) *Electronic structure of the amorphous oxide semiconductor a-InGaZnO_{4-x}: Tauc-Lorentz optical model and origins of subgap states*, Toshio Kamiya, Kenji Nomura, and Hideo Hosono, Phys. Status Solidi A 206 (2009) 860-867
- 15) *Structural Transformation of Ca-Arrangements and Carrier Transport Properties in Ca_{0.33}CoO₂ Epitaxial Films*, Kenji Sugiura, Hiromichi Ohta, Yukiaki Ishida, Rong Huang, Tomohiro Saito, Yuichi Ikuhara, Kenji Nomura, Hideo Hosono, and Kunihito Koumoto, Applied Physics Express 2 (2009) 035503
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- 17) *Oxygen Exchange at the Internal Surface of Amorphous SiO₂ Studied by Photoluminescence of Isotopically Labeled Oxygen Molecules*, Koichi Kajihara, Taisuke Miura, Hayato Kamioka, Masahiro Hirano, Linards Skuja, and Hideo Hosono, Phys. Rev. Lett. 102 (2009) 175502-1 - 4
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- 19) *Hydrogen permeation of tungsten phosphate glass thin films*, Solid State Ionics, Hiromasa Tawarayama, Hiroshi Kawazoe, and Hideo Hosono, Solid State Ionics 180 (2009) 556-559
- 20) *Oxygen ion conduction in 12CaO·7Al₂O₃: O²⁻ conduction mechanism and possibility of O⁻ fast conduction*, Hideo Hosono, Katsuro Hayashi, Koichi Kajihara, Peter V. Sushko, and Alexander L. Shluger, Solid State Ionics 180 (2009) 550-555

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- 22) *An NMR study on the F-doping evolution of the iron oxypnictide LaFeAs(O_{1-x}F_x)*, Y Nakai S Kitagawa, K Ishida, Y Kamihara, M Hirano, and H Hosono, *New J. Phys.* 11 (2009) 045004
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- 25) *Heteroepitaxial film growth of layered compounds with the ZrCuSiAs-type and ThCr₂Si₂-type structures: From Cu-based semiconductors to Fe-based superconductor*, Hidenori Hiramatsu, Toshio Kamiya, Masahiro Hirano, and Hideo Hosono, *Physica C* 469 (2009) 657-666
- 26) *Large domain growth of GaN epitaxial films on lattice-matched buffer layer ScAlMgO₄*, Takayoshi Katase, Kenji Nomura, Hiromichi Ohta, Hiroshi Yanagi, Toshio Kamiya, Masahiro Hirano, Hideo Hosono, *Mater. Sci. & Eng. B* 161 (2009) 66-70
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- 28) *Bistable resistance switching in surface-oxidized C12A7:e⁻ single-crystal*, Y. Adachi, S.-W. Kim, T. Kamiya, and H. Hosono, *Mater. Sci. & Eng. B* 161 (2009) 76-79
- 29) *Pressure studies of (La,Sm)FeAs_{1-x}F_x and LaFePO*, H. Takahashi, H. Okada, K. Igawa, Y. Kamihara, M. Hirano, and H. Hosono, *Physica C* 469 (2009) 413-417
- 30) *To eaht extet iron-pnictide new superconductors have clarified: a progress report*, K. Ishida, Y. Nakai, and H. Hosono, *J. Phys. Soc. Jpn.* 78 (2009) 062001-1 - 20
- 31) *Systematic ⁷⁵As NMR study of the dependence of low-lying excitations on F-doping in the iron oxypnictide LaFeAsO_{1-x}F_x*, Y. Nakai, S. Kitagawa, K. Ishida, Y. Kamihara, M. Hirano, and H. Hosono, *Phys. Rev. B* 79 79 (2009) 212506-1 - 4
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- 35) *Origins of threshold voltage shifts in room-temperature deposited and annealed a-In–Ga–Zn–O thin-film transistors*, Kenji Nomura, Toshio Kamiya, Masahiro Hirano, and Hideo Hosono, Appl. Phys. Lett. 95 (2009) 013502-1 - 3
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- 37) *Direct Synthesis of Powdery Inorganic Electride [Ca₂₄Al₂₈O₆₄]⁴⁺(e⁻)₄ and Determination of Oxygen Stoichiometry*, Satoru Matsuishi, Takatoshi Nomura, Masahiro Hirano, Katsuaki Kodama, Shin-ichi Shamoto, and Hideo Hosono, Chem. Mater. 21 (2009) 2589-2591
- 38) *Photofield-Effect in Amorphous In-Ga-Zn-O (a-IGZO) Thin-Film Transistors*, Tze-Ching Fung, Chiao-Shun Chuang, Kenji Nomura, Han-Ping David Shieh, Hideo Hosono, and Jerzy Kanicki, Journal of Information Display 9 (2009) 21-29
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2. International/Domestic Conferences

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- 12) 2009, 5, *Two families of superconductors discovered in our materials research: iron-oxypnictide and electride*, Hideo Hosono, Japan-US workshop on exploration for new superconductors (Shonan Village, May13-15),
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- 14) 2009, 6, *Transparent Amorphous Oxide Semiconductors; material design and TFT application*, Hideo Hosono, 8th Japan-France Workshop on Nanomaterials (June 15, Tsukuba),

- 15) 2009, 6, *Ag-based Delafossites Catalysts for Diesel Soot Combustion*, Yuya Toyoda, Satoru Matsuishi, Hideo Hosono and Yasushi Hayashi, 3rd International Symposium on Science and Technology of Advanced Ceramics(STAC-3) (Yokohama, June 16-18),
- 16) 2009, 6, *Reducing power of hydride ion- or electron-doped mayenites dissolved in water*, Toshihiro Yoshizumi, Sung-Wng Kim, Hideo Hosono, Katsuro Hayashi, 3rd International Symposium on Science and Technology of Advanced Ceramics(STAC-3) (Yokohama, June 16-18),
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3. Awards

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- 5) Dong Hee Lee, Kenichi Kawamura, Kenji Nomura, Hiroshi Yanagi, Toshio Kamiya, Masahiro Hirano and Hideo Hosono: Steady-state photoconductivity of amorphous-In-Ga-Zn-O; *The Best Poster Award of 6th International Symposium on Transparent Oxide Thin Films for Electronics and Optics (TOEO-6) (April 15-17, 2009, Tokyo Fashion Town Building, Tokyo, Japan)*, 17a-O006, (2009).
- 6) Tomomasa Shinozaki, Kenji Nomura, Takayosi Katase, Toshio Kamiya, Masahiro Hirano and Hideo Hosono: Epitaxial growth of GaN films on InGaZnO₄ single crystalline buffer layer; *The Best Poster Award of 6th International Symposium on Transparent Oxide Thin Films for Electronics and Optics (TOEO-6) (April 15-17, 2009, Tokyo Fashion Town Building, Tokyo, Japan)*, 17a-O006, (2009).

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